(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 993 793 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
19.04.2000 Bulletin 2000/16

(51) Int. Cl.[7]: **A47B 67/04**, A47B 88/04

(21) Application number: **98830596.7**

(22) Date of filing: **12.10.1998**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(71) Applicant: **Mobilever S.p.a.**
10121 Torino (IT)

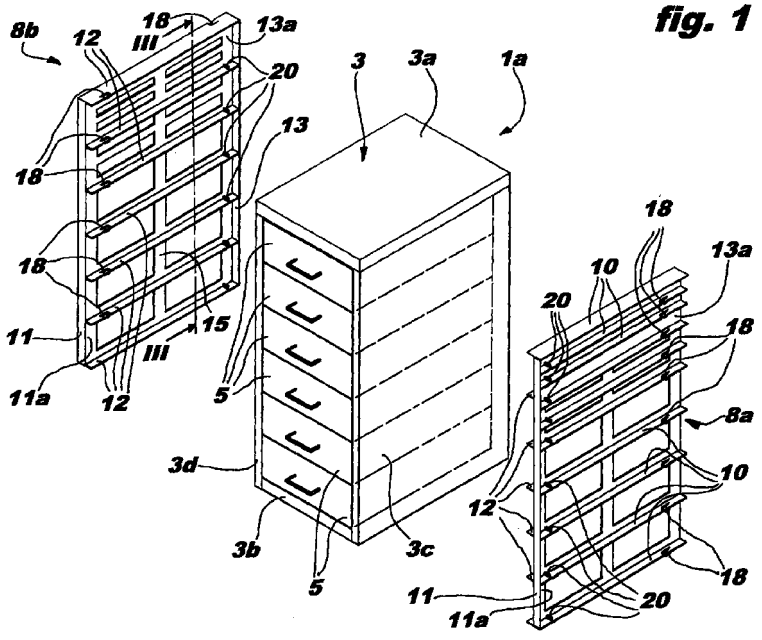
(72) Inventor: **Ruffino, Antonio**
I-10059 Susa, Torino (IT)

(74) Representative:
Saconney, Piero et al
c/o JACOBACCI & PERANI S.p.A.
Corso Regio Parco, 27
10152 Torino (IT)

(54) Side guide structure for the drawers of a drawer unit

(57) A side guide structure for the drawers of a drawer unit includes a substantially flat frame (8a, 8b) and a first series of rectilinear, parallel guides (10) extending from a first face of the frame (8a, 8b) and defining a first series of support and sliding seats for drawers (5). The structure includes a second set of rectilinear parallel guides (12) that extend from the second face of the frame (8a, 8b) and define a second series of support and sliding seats for drawers (5).

fig. 1



EP 0 993 793 A1

Description

[0001] The present invention generally relates to components for drawer units.

[0002] More particularly, the invention relates to a side guide structure for the drawers of a drawer unit, including a substantially flat frame and a first series of parallel, rectilinear guides that extend from a first face of the frame and define a first series of support and sliding seats for drawers.

[0003] In drawer units, the furniture body has inside it a plurality of guides that sustain the drawers and enable them to slide with respect to the furniture body between a closed position and an open position. Usually, these guides are connected to a pair of lateral frames of the drawer unit and are positioned with respect thereto depending on the number and height of the drawers present in this kind of drawer unit. In some cases, the sliding guides for the drawers can be coupled with seats conveniently located on particular frames so that the frames, together with the associated guides, can be made during the assembly of the drawer unit depending on the number and dimensions of drawers to be used.

[0004] In summary, in the prior art, each side guide frame for a drawer unit is manufactured before or during the assembly of the furniture with a single series of guides that extend from a face of the frame, the number and disposition of which depend on the kind of drawer unit to be manufactured. In this way, it is necessary to provide a pair of specific frames, one for each side of the unit, for each kind of drawer unit.

[0005] However, in the mass production of furniture, a single furniture body is frequently used for a range of different arrangements of components. For example, a drawer unit having standard external dimensions that can be included as a furnishing component in a series of other furniture units of the same furnishing line, can have a different number of drawers of various heights depending on the intended use of the unit.

[0006] In this case, the necessity of providing a pair of different side guide structures for each different drawer of the drawer unit, irrespective of whether the dimensions of the furniture unit remain the same, leads to an increase in the production and storage costs of the various components of the drawer units.

[0007] In order to overcome this disadvantage, the object of the invention is a side guide structure of the type defined above, characterised in that it includes a second series of parallel rectilinear guides that extend from the second face of the frame and define a second series of support and sliding seats for drawers.

[0008] By virtue of this arrangement, a guide structure according to the invention is more versatile in its application as it enables the same frame to be used for the same furniture body in two different assembly arrangements. For example, a guide structure according to the invention, the frame of which has the series of guides of the two sides of the drawer unit on its two opposite faces, respectively, can be utilised on either side of the same drawer unit.

[0009] Preferably, the second series of guides includes a number of guides different from that of the first series of guides.

[0010] In this way, the same guide structure can be installed on one side of two kinds of drawer unit having different numbers of drawers, utilising the first series of guides on one of its faces, or the second series of guides on the other face to guide the drawers.

[0011] By virtue of the invention, it is in particular possible to reduce significantly the production and storage costs of the guide frames for the mass production of the drawer units.

[0012] Further characteristics and advantages of the invention will become clearer from the following detailed description, given purely by way of non-limitative example and made with reference to the accompanying drawings in which:

Figure 1 is a schematic exploded perspective view of a first kind of drawer unit provided with side guide structures for the drawers according to the invention, in which the guides on a first face of the guide structures are used,

Figure 2 is a view similar to Figure 1 that illustrates another kind of drawer unit with the drawer guide structures of Figure 1, utilising the guides on the other face of the guide structures,

Figure 3 is a front view on an enlarged scale of a section of a drawer guide structure taken along the line III-III of Figure 1,

Figure 4 is a side view of the structure of Figure 3 taken in the direction of the arrow IV, and

Figure 5 is a view from above of the structure of Figure 4, with a section taken along the line V-V.

[0013] With initial reference to Figures 1 and 2, a pair of drawer units, both having the same body 3, are respectively indicated 1a and 1b. The body 3 of the drawer units 1a and 1b comprises essentially an upper panel 3a, a lower panel 3b, a C-shape half-shell defining a back wall of the drawer unit (not seen in the drawings) and a pair of side panels 3c and 3d, in which the panels 3a, 3b, 3c, 3d and the back wall are connected to each other to define a structure for supporting the drawers that can be used for both the drawer units 1a and 1b.

[0014] In particular, the drawer unit 1a includes a series of six drawers 5 of equal height, while the drawer unit 1b has four bottom drawers 5 that are the same as those of the drawer unit 1a, two upper drawers 5a the height of which is smaller than that of the drawers 5, and three drawers 5b arranged between the drawers 5 and 5a and of a height between that of the drawers 5a and 5, the total height of all of the drawers in the drawer units 1a and 1b being substantially the same.

[0015] In order to enable the support and sliding of

the drawers of the drawer units 1a, 1b with respect to the body 3, each unit includes a pair of side guide structures, indicated respectively 8a and 8b, that are assembled in a respective side panel 3c, 3d of the body 3, as illustrated more clearly in Figure 5.

[0016] Each guide structure 8a, 8b is a substantially flat frame, for example a rectangular shape corresponding to that of an associated panel 3c, 3d of the body 3.

[0017] Each frame 8a, 8b includes a first series of rectilinear, parallel guides 10 that extend transversely on a first face thereof, and a second series of rectilinear guides 12, these also being parallel, that extend transversely on its other face, an associated drawer support and sliding seat being defined between each pair of guides 10 or 12. Each guide 10, 12 is formed from a thin, elongate strip, normally made from high strength plastics material.

[0018] In the embodiment illustrated in the drawings, each frame 8a, 8b has a different number of rectilinear guides on each of its faces so that it is adapted for use as a component of two kinds of drawer units, each having a different number of drawers.

[0019] In the specific case, both of the frames 8a and 8b define on one face seats for six drawers 5 by means of the guides 12 and, on the opposite face, seats for nine drawers 5, 5a and 5b by means of the guides 10, there being ten guides 10 in order to define the nine seats for the drawers, while there are seven rectilinear guides 12 to define the six drawer seats. The structure of the frames 8a and 8b is, in particular, specular so that when one of them is located on the right-hand side of the drawer unit, the other is located on the left-hand side.

[0020] Each rectilinear guide 10, 12 has a slightly rounded front end in order to assist the insertion of the associated drawer, and an opposite rear end. All the rear ends of the rectilinear guides of the same series are preferably connected to each other by means of a pillar-like formation indicated 11 for the guides 10, and 13 for the guides 12, which structurally strengthens the frames 8a, 8b.

[0021] In the embodiment illustrated of rectangular frames, the pillar-like formations 11 and 13 extend transversely the general plane of the frame, like the guides 10, 12, along opposite sides of the frame itself in order to strengthen the frame against flexing and twisting. In order further to improve the strength of each frame 8a, 8b, each of them has auxiliary pillars lying in the general plane of the frame, in particular, a first pillar 11a adjacent the pillar-like formation 11, a second pillar 13a adjacent the pillar-like formation 13, as well as an intermediate pillar 15 equidistant from the pillars 11a and 13a.

[0022] The structure of the frames 8a and 8b is advantageously open between the rectilinear guides 10, 12 and between the auxiliary pillars 11a, 13a and 15, so that less material is required for the production thereof without this prejudicing its strength while at the same time, making it lighter.

[0023] Preferably, the rectilinear guide at the top of each sliding seat has a safety device to prevent the drawer coming off the guide, comprising a sprung flap 18 one of the ends of which projects from the side of the respective drawer seat. In addition, one of the two guides of each drawer seat, for example the top one, has an end stop shoulder element 20 constituted, for example, by a projection that projects towards the seat close to its rear portion to act as a stop for the drawer sliding in the respective seat.

[0024] Advantageously, each frame 8a, 8b is formed by moulding as a single piece from high strength plastics material, so that the series of guides 10 and 12, together with the flaps 18 and the shoulder elements 20, the pillar-like formations 11 and 13 and the auxiliary pillars 11a, 13a and 15, are integral with each other.

[0025] By virtue of the invention it is therefore possible to utilise a single pair of specular frames 8a, 8b in order to produce a drawer guide structure for a drawer unit having either six or nine drawers. In particular, this enables a reduction by half of the stock of guide structures necessary to produce two kinds of drawer units having different numbers of drawers, starting from a single furniture body, while previously it was necessary to provide for the same purpose four guide frames, that is right and left frames for both the six drawer units and for the nine drawer units. Furthermore, the production costs of the drawer guide structure is significantly reduced in comparison with the prior art, due to the fact that a frame that is usable in a drawer unit having either six or nine drawers can be manufactured in a single moulding operation, in particular, using a single mould.

Claims

1. A side guide structure for the drawers of a drawer unit, including a substantially flat frame (8a, 8b) and a first series of parallel, rectilinear guides (10) that extend from a first face of the frame (8a, 8b) and define a first series of support and sliding seats for drawers (5; 5, 5a, 5b),

   characterised in that it includes a second series of parallel, rectilinear guides (12) that extend from the second face of the frame (8a, 8b) and define a second series of support and sliding seats for drawers (5).

2. A structure according to Claim 1, characterised in that the second series of guides (12) includes a number of guides different from that of the first series of guides (10).

3. A structure according to Claim 1 or Claim 2, characterised in that first and second strengthening pillar-like formations (11, 13) extend respectively from opposite faces of the frame (8a, 8b), and in that such pillar-like formations (11, 13) are each con-

nected to the guides (10, 12) of a respective series of rectilinear guides.

4. A structure according to Claim 3, characterised in that the said pillar-like formations (11, 13) are parallel and separate from each other.

5. A structure according to Claim 4, characterised in that the frame (8a, 8b) is rectangular in shape, both pillar-like formations (11, 13) being formed from elongate elements that extend transversely of the general plane of the frame (8a, 8b) in correspondence with a pair of its opposite sides, the rectilinear guides (10, 12) of the said first and second series of guides being arranged perpendicular to the pillar-like formations (11, 13).

6. A structure according to any of Claims 3 to 5, characterised in that the rectilinear guides (10, 12) of each series of guides have a rear end rigidly connected to the respective pillar-like formation (11, 13).

7. A structure according to Claim 5, characterised in that each rectilinear guide (10, 12) has an integral shoulder element (20) close to the respective pillar-like formation (11, 13), forming an end stop for the respective drawer (5, 5a, 5b).

8. A structure according to Claim 6 or Claim 7, characterised in that each rectilinear guide (10, 12) includes a drawer-retaining safety device (18) for the respective drawer (5, 5a, 5b), close to the end of the guide (10, 12) opposite the associated pillar-like formation (11, 13).

9. A structure according to Claim 8, characterised in that the drawer-retaining safety device is formed integrally with the respective guide (10, 12) by means of a sprung flap (18) which projects therefrom towards the respective drawer seat.

10. A structure according to any of Claims 1 to 9, characterised in that the frame (8a, 8b) has lightening apertures in correspondence with the drawer seats.

11. A structure according to any of Claims 4 to 10, characterised in that the frame (8a, 8b) has an auxiliary pillar (15) in an intermediate position between the said pillar-like formations (11, 13), which extends along the general plane of the frame (8a, 8b).

12. A structure according to any of Claims from 3 to 11, characterised in that the frame (8a, 8b) is manufactured as a single piece together with the pillar-like formations (11, 13) and both series of rectilinear guides (10, 12) by a moulding operation of plastics material.

13. A structure according to any of Claims 1 to 12, characterised in that the first series of rectilinear guides (12) defines seats for six drawers (5), and in that the second series of rectilinear guides (10) defines seats for nine drawers (5, 5a, 5b), so that it can be used equally in a drawer unit (1a, 1b) having either six drawers (5) or nine drawers (5, 5a, 5b).

fig. 1

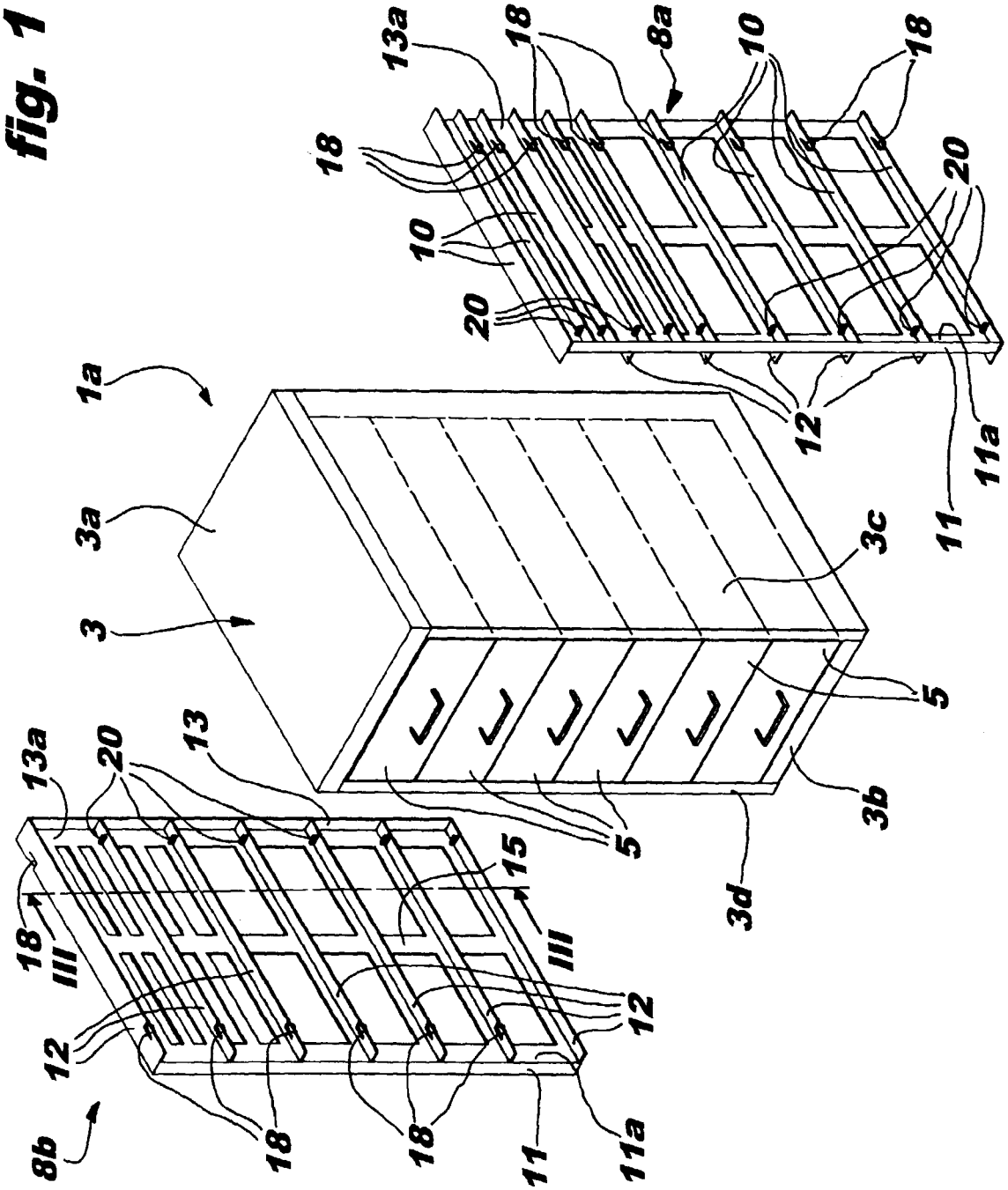

1a
3a
3
3c
3b
3d
5
13
13a
20
18
III
12
8b
18
18
11
11a
15
III
12
13a
18
8a
10
18
18
10
20
20
12
11
11a

fig. 2

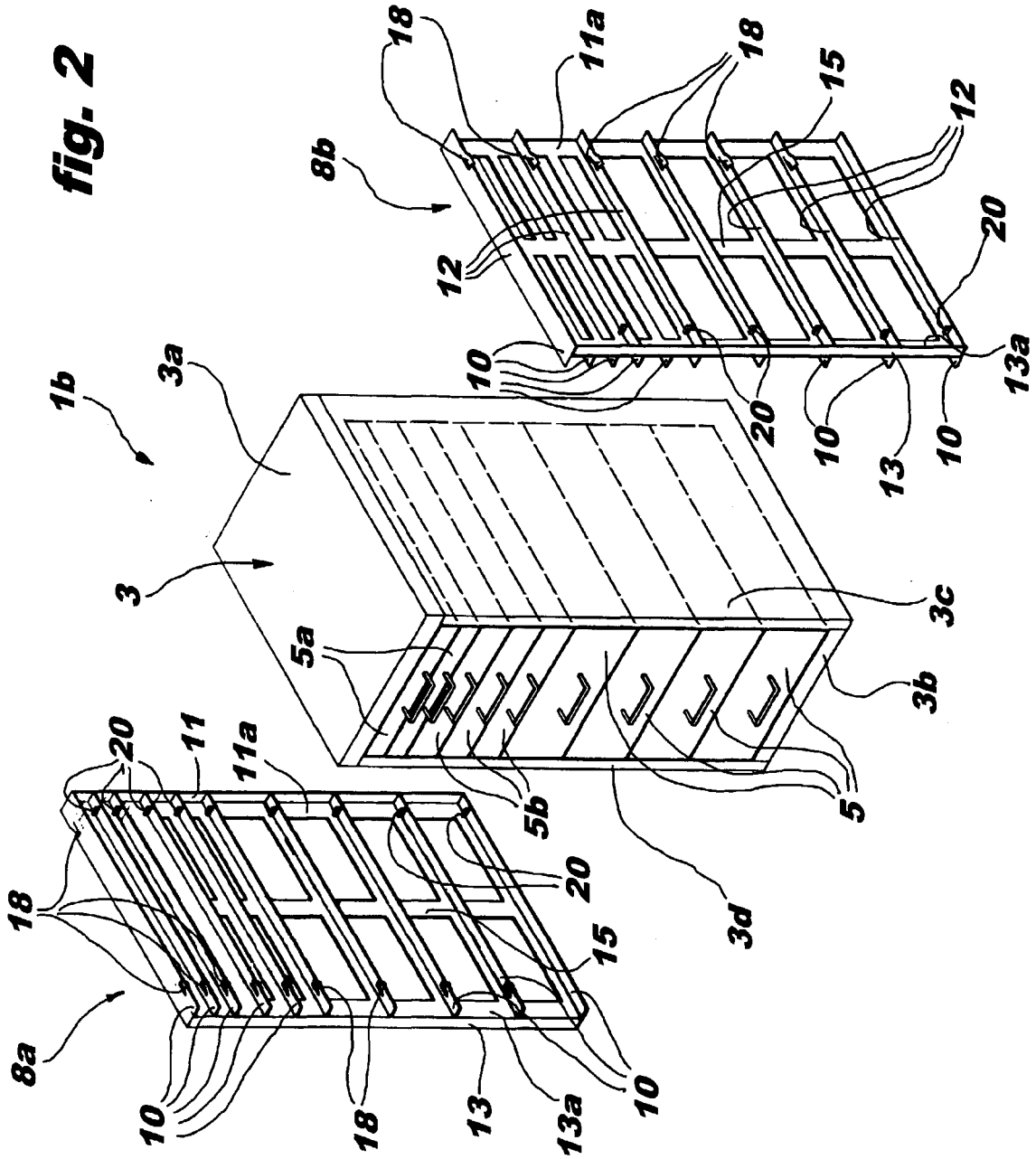

18
11a
18
15
12
8b
12
20
10
3a
1b
20
10
13
10
13a
3
3c
5a
3b
5b
5
11
11a
20
18
20
15
3d
8a
10
18
13
13a
10

fig. 3

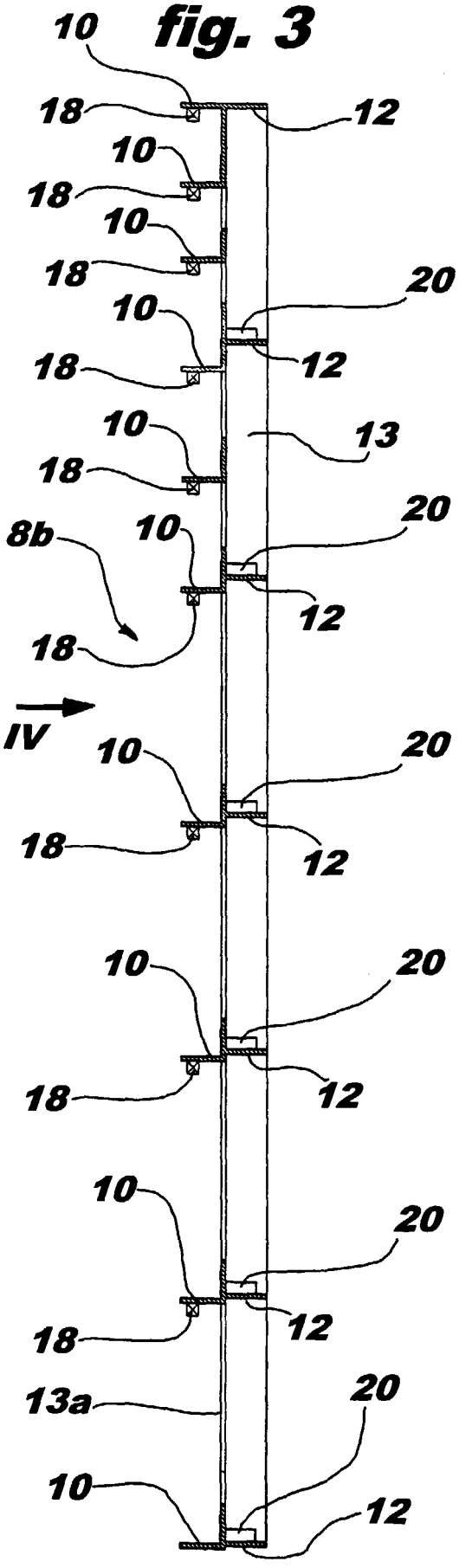

10
18
12
10
18
10
18
20
10
18
12
10
13
18
20
8b
10
12
18
IV
10
20
18
12
10
20
18
12
10
20
18
12
13a
20
10
12

fig. 4

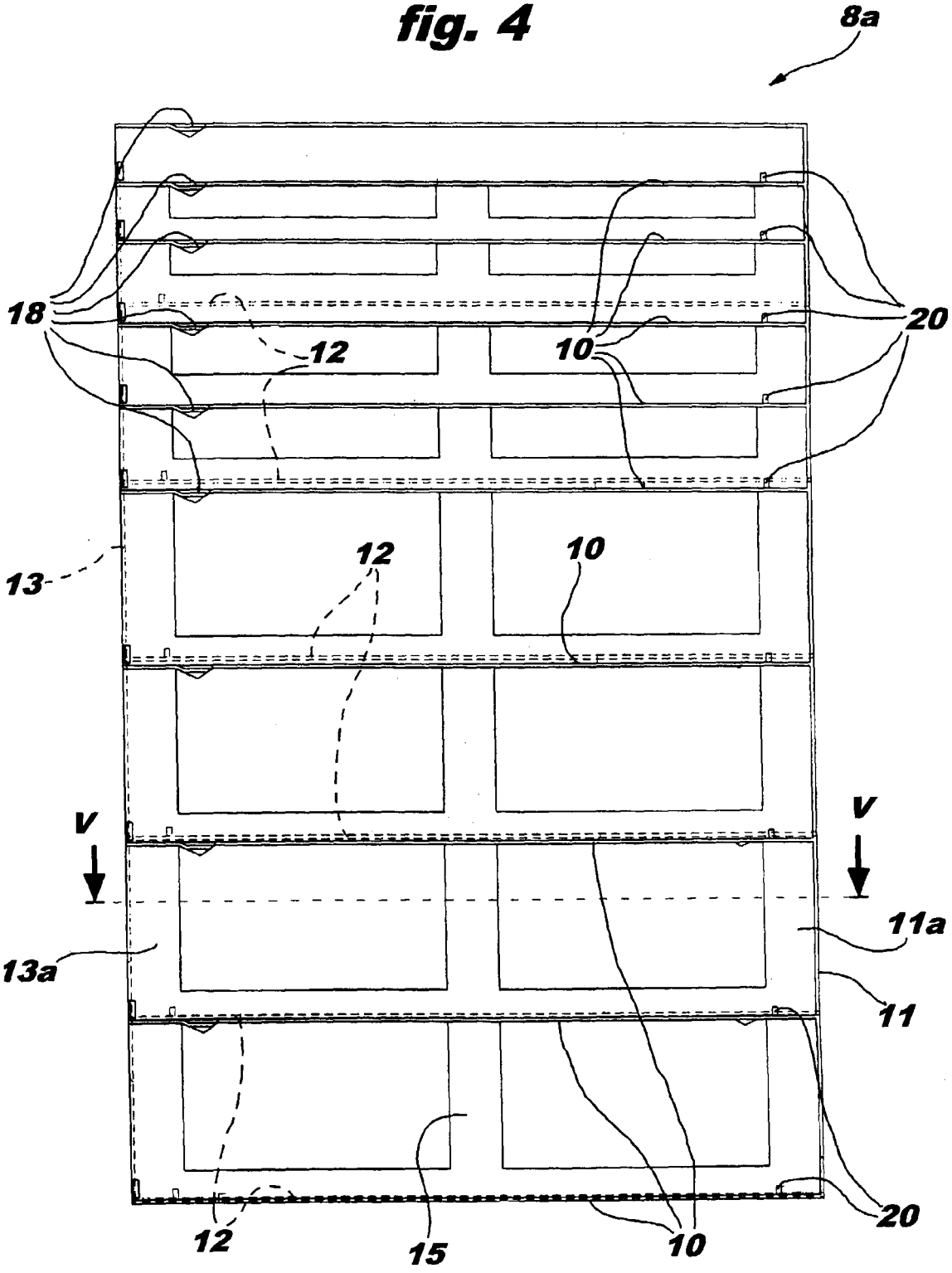
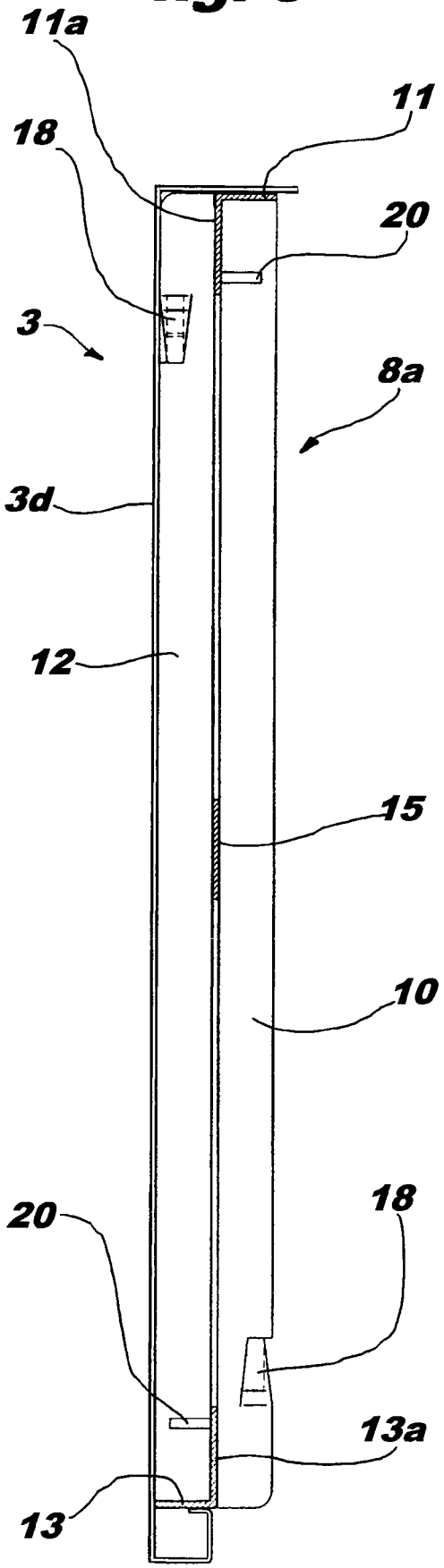


fig. 5



European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 83 0596

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	DE 44 06 817 A (BEISSWENGER FLASCHNEREI GMBH) 29 June 1995	1-4	A47B67/04 A47B88/04
A	* column 2, line 20 - line 50; figures 1,7 * * column 6, line 25 - line 51 *	5	
X	FR 2 162 983 A (THE CHAMPION PAPER CO. LTD.) 20 July 1973 * page 2, line 31 - page 4, line 14; figures 1-4 *	1	
X	US 4 634 193 A (MIKE LIU) 6 January 1987 * abstract; figures 1,5,6 *	1	
A	* column 2, line 29 - line 44 *	7	
A	FR 2 124 930 A (ESCOLANO SERRANO ET AL.) 22 September 1972 * claim 1; figures 1-4 *	1,3,4,6, 12	
A	US 2 704 699 A (EVANS) 22 March 1955 * column 3, paragraph 3 - last paragraph; figures 1,2,8-10 *	1,7-9	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

A47B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	9 March 1999	Jones, C

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 98 83 0596

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

09-03-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 4406817 A	29-06-1995	NONE	
FR 2162983 A	20-07-1973	CA 988573 A	04-05-1976
		DE 2256853 A	30-05-1973
		GB 1366219 A	11-09-1974
		JP 48063864 A	05-09-1973
		NL 7215809 A	24-05-1973
		US 3730605 A	01-05-1973
US 4634193 A	06-01-1987	NONE	
FR 2124930 A	22-09-1972	BE 778665 A	16-05-1972
		GB 1375077 A	27-11-1974
		US 3765540 A	16-10-1973
US 2704699 A	22-03-1955	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82